TEW 2817

PATENT APPLICATION
Docket No: 14321.68

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of		)
		)
	Makoto Yamada et al.	)
		)
Serial No.:	10/530,133	) Art Unit
		) 2817
Filed:	April 4, 2005	)
		)
Confirmation No.:	9922	)
		)
For:	FIBER LASER, SPONTANEOUS EMISSION LIGHT SOURCE AND OPTICAL FIBER AMPLIFIER	)

CERTIFICATE OF DEPOSIT UNDER 37 C.F.R. § 1.8

I hereby certify that the following documents are being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22313-1450, on the 27th day of December 2005.

- Transmittal for Information Disclosure Statement (3 pages)
- Information Disclosure Statement (3 pages)
- Form PTO-1449 listing 11 references (2 pages)
- A copy of 10 Non-US references listed on the Form PTO-1449
- Postcard

Respectfully submitted,

DANA L. TANGREN
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Form PTO-1449 Sheet 1 of 2

Applicant: Makoto Yamada et al. Confirmation No.: 9922

Serial No.: 10/530,133 Att'y Docket No.: 14321.68

Filing Date: April 4, 2005 Art Unit: 2817

For: FIBER LASER, SPONTANEOUS EMISSION LIGHT SOURCE AND OPTICAL FIBER AMPLIFIER

INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

Examiner Initial*	Document Number	Issue Date	Name
_____ 1	4,967,416	10/30/1990	Esterowitz et al.

Foreign Patent Documents

Examiner Initial*	Document Number	Publication Date	Country or Patent Office	Translation
_____ 2	03-293788	12/25/1991	Japan	No
_____ 3	04-180279	06/26/1992	Japan	No
_____ 4	06-283798	10/07/1994	Japan	No
_____ 5	2002-299731	10/11/2002	Japan	No

Other Documents

(including author, title, pertinent pages, etc.)

Examiner Initial*

_____ 6 L. Esterowitz et al., *Pulsed Laser Emission at 2·3μm In a Thulium-Doped Fluorozirconate Fibre*, Electronics Letters, Vol. 24, No. 17, August 18, 1988, pp. 1104.

_____ 7 J.Y. Allain et al., *Tunable CW Lasing Around 0·82, 1·48, 1·88 and 2·35 μm in Thulium-Doped Fluorozirconate Fibre*, Electronics Letters, Vol. 25, No. 24, November 23, 1989, pp. 1660-1662.

_____ 8 Atsushi Taniguchi et al., *1212 nm Pumping of 2 μm Tm-Ho-Codoped Silica Fiber Laser*, Applied Physics Letters, Vol. 81, No. 20, November 11, 2002, pp. 3723-3725.

Examiner: Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

_____ 9 P.R. Barber et al., *Infrared-induced Photodarkening in Tm-doped Fluoride Fibers*, Optics Letters, Vol. 20, No. 21, November 1, 1995, pp. 2195-2197.

_____ 10 R.M. Percival et al., *Highly Efficient and Tunable Operation of Two Colour Tm-Doped Fluoride Fibre Laser*, Electronics Letters, Vol. 28, No. 7, March 26, 1992, pp. 671-673.

_____ 11 Satomi Sumiyoshi, *Kokidochu Sekigal Fiber Laser*, Japanese Journal of Optics, Vol. 28, No. 8, 1999, pp. 449-454 (with partial English translation).

References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initialed by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

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Examiner: Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609, draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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PATENT APPLICATION
Docket No: 14321.68

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In re application of	Makoto Yamada et al.	)
Serial No.:	10/530,133	) Art Unit) 2817
Filed:	April 4, 2005	)
Confirmation No.:	9922	)
For:	FIBER LASER, SPONTANEOUS EMISSION LIGHT SOURCE AND OPTICAL FIBER AMPLIFIER	)

TRANSMITTAL FOR INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing and pursuant to 37 C.F.R. § 1.97 is an Information Disclosure Statement, which includes the following statements, if any, required variously by 37 C.F.R. § 1.98:

___ Statement of relevance of selected cited references not in the English language which are not translated.

___ Statement that selected cited references are substantially cumulative of an enclosed or previously submitted reference.

___ Statement that selected cited references were previously cited by or submitted to the United States Patent and Trademark Office in a prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

A. Additional Materials Required Due to Content of Information Disclosure Statement

Transmitted are the following documents in addition to the Information Disclosure Statement as required variously under 37 C.F.R. § 1.98:

X Form PTO-1449 listing 11 references submitted for consideration.

X A copy of 10 Non-US references listed on the Form PTO-1449.

___ English translations of ___ (___) of the references listed on the Form PTO-1449 which are not in the English language.

___ Copies of the following documents from the prosecution of a previous, related application:

___ Form PTO-1449 AND INFORMATION DISCLOSURE STATEMENT; and

___ Form PTO-892

B. Additional Materials Required Due to Timing of Filing of Information Disclosure Statement

The transmitted Information Disclosure Statement is being filed within one (1) of the following four (4) time periods:

I. X Prior to the later of either three (3) months following the filing date or the mailing of a first Office Action. Accordingly, no materials other than those listed above are enclosed.

II. ___ Following the latter of either three (3) months following the filing date or the mailing of a first Office Action, but before the mailing of a final Office Action or a Notice of Allowance. Accordingly, to secure consideration thereof, one (1) of the following is also enclosed:

___ Promptness Certification; or

___ Check No. _____ in the amount of ___ constituting the submission fee set forth in 37 C.F.R. § 1.17(p).

III. ___ After the mailing of a Notice of Allowance, but before payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:

___ Promptness Certificate;

___ Petition for Consideration; and

___ Check No. in the amount of ___ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).

IV. ___ After payment of the Issue Fee. Accordingly, in order to secure consideration thereof, each of the following are also enclosed:

___ Petition to Withdraw from Issue; and

___ Check No. ___ in the amount of ___ constituting the petition fee set forth in 37 C.F.R. § 1.17(i)(1).

C. Fees

The Commissioner is hereby authorized to charge payment of or any deficiency in the following fees associated with this communication, or to credit any overpayment thereof, to Deposit Account No. 23-3178. A duplicate copy of this letter is enclosed.

_X_ Any fee required in relation to filing of this letter or any documents transmitted therewith.

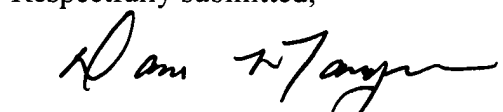
___ The submission fee set forth in 37 C.F.R. § 1.17(p) in the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that any Promptness Certificate submitted meets the requirements of 37 C.F.R. § 1.97(e).

___ The submission fee set forth in 37 C.F.R. § 1.17(p).

___ The petition fee set forth in 37 C.F.R. § 1.17(i)(1).

Dated this 27th day of December 2005.

Respectfully submitted,



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Enclosures
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INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed listed references are disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof that is not a US patent document is also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 CFR § 1.98(a)(3)

In accordance with 37 CFR § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

Japanese Patent No. JP 03-293788: PURPOSE: To realize continuous oscillation at room temperature by opposing two reflectors through an active medium containing laser active ions and composing the active medium of a fluoride glass fiber. CONSTITUTION: In an optical fiber type laser comprising two reflectors opposing through an active medium containing laser active ions, the active medium is composed of a fluoride glass fiber 2 containing less than 1mol% of TmF3. Upon pumping with the beam from a semiconductor laser diode 4, light is spontaneously emitted in the fluoride fiber 2 to which Tm is added and temporarily converted through an objective lens 6' into a parallel beam which is then passed through a half mirror 5 and impinged on a grating 3. Light having specific wavelength is selectively returned through the grating 3 to the fluoride fiber 2 to which Tm is added and reflected on the mirror 1 thus constituting an optical feedback system. Consequently, semiconductor pumping and continuous oscillation at room temperature are realized.

Japanese Patent No. JP 04-180279: PURPOSE: To obtain sufficient optical amplifying and oscillating gains in a special wavelength band by providing an optical transmission line composed by providing optically functional glass in which Tm3+ is added to propagate a signal light, an exciting light source for generating an exciting light, and optical means for receiving the exciting light in the line. CONSTITUTION: The other end of an optical fiber 19a connected to the output side of a laser beam source 12 is connected to the input side of a coupler 13, and the end of an optical fiber 18b on the output side of the coupler 13 is connected to one end of an optical fiber 10. Thulium ions (Tm3+) are excited by an exciting beam having a 1.20μm band introduced into the optical transmission line by optical means composed of the coupler 13 and fibers 18a, 18b, 19a, 19b. The part of the Tm3+ is induced by the beam having a 1.5-1.7μm band from the line 10 and the beam having a 1.5-1.7μm band fed back to the line, and the beam having a 1.5-1.7μm band is generated. Thus, an optical amplifying or oscillating in 1.5-1.7μm band can be performed.

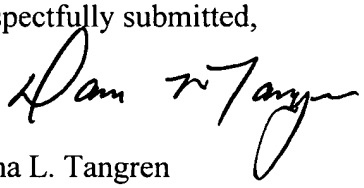
Japanese Patent No. JP 06-283798: PURPOSE: To efficiently oscillate 1.9μm band light by using a fluoride fiber whose core contains thulium as a gain medium and using a pumping beam which has a specific wavelength. CONSTITUTION: A pumping beam, which is oscillated by a color center laser 2 and have a wavelength range of 1.55-1.65μm, are reflected by a dichroic mirror 3 to be applied on the one edge of an optical fiber 1 through a condenser lens 4 and are permitted to enter a laser resonator. Thulium ions are present in the core area of the fluoride optical fiber 1, the thulium ions which are at 3H6 level are bumped once to a level of 3H4 by the pumping beam and are returned to the 3H6 level. At that time, light which have a wavelength of 1.9μm band and have energy that equals to the energy difference between the 3H4 level and the 3H6 level is emitted. The

beam is emitted from the other edge of the optical fiber 1, reflected by the mirror 5 to be directed to the fiber 1 again and a beam with wavelength of 1.9μm band is emitted. Thus, the high- power and highly efficient fiber laser with a wavelength of 1.9μm band is provided.

Japanese Patent Application No. JP 2002-299731: PROBLEM TO BE SOLVED: To operate an amplifier for optical fiber at high efficiency by using a wavelength of excitation light capable of disregarding absorption between the excitation levels of Tm (thulium) ion. SOLUTION: First, Yb (ytterbium) is first excited by a system co-added with the Yb, rather than directly exciting the Tm ions, and then due to the energy transfer between Yb and Tm ions of 3H3 level of Tm are excited, and a population inversion between 3 F4 and 3H6 levels is formed through no-radiative process.

Dated this 27th day of December 2005.

Respectfully submitted,



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